

The List of Selected Publications

Articles

1. B. Chen and S. Fujishige: On the feasible payoff set of two-player repeated games with unequal discounting. *International Journal of Game Theory* (to appear).
2. S. Fujishige: A note on polylinking flow networks. *Mathematical Programming*, Ser. A (to appear).
3. S. Fujishige and S. Isotani: A submodular function minimization algorithm based on the minimum-norm base. *Pacific Journal of Optimization* **7** (2011) 3–17.
4. S. Fujishige: A note on disjoint arborescences. *Combinatorica* **30**(2) (2010) 247–252.
5. S. T. McCormick and S. Fujishige: Strongly polynomial and fully combinatorial algorithms for bisubmodular function minimization. *Mathematical Programming*, Ser. A **122** (2010) 87–120.
6. K. Bérczi, S. Fujishige, and N. Kamiyama: A linear-time algorithm to find a pair of arc-disjoint spanning in-arborescence and out-arborescence in a directed acyclic graph. *Information Processing Letters* **109** (2009) 1227–1231.
7. S. Fujishige and K. Nagano: A structure theory for the parametric submodular intersection problem. *Mathematics of Operations Research* **34** (2009) 513–521.
8. S. Fujishige, T. Hayashi, and K. Nagano: Minimizing continuous extensions of discrete convex functions with linear inequality constraints. *SIAM Journal on Optimization* **20** (2009) 856–867.
9. S. Fujishige, T. Hayashi, K. Yamashita, and U. Zimmermann: Zonotopes and the LP-Newton method. *Optimization and Engineering* **10** (2009) 193–205.
10. M. Sakashita, K. Makino, H. Nagamochi, and S. Fujishige: Minimum transversals in posi-modular systems. *SIAM Journal on Discrete Mathematics* **23** (2009) 858–871.
11. U. Faigle and S. Fujishige: A general model for matroids and the greedy algorithm. *Mathematical Programming*, Ser. A, **119** (2009) 353–369.
12. S. Fujishige: Theory of principal partitions revisited. In: W. Cook, L. Lovász, and J. Vygen (Editors): *Research Trends in Combinatorial Optimization* (Springer, Berlin, 2009), pp. 127–162.
13. M. Sakashita, K. Makino, and S. Fujishige: Minimizing a monotone concave function with laminar covering constraints. *Discrete Applied Mathematics* **156** (2008) 204–219.
14. S. Fujishige and H. Narayanan: Polyhedrally tight set functions and discrete convexity. *Pacific Journal of Optimization* **4** (2008) 139–151.

15. M. Sakashita, K. Makino, and S. Fujishige: Minimum cost source location problems with flow requirements. *Algorithmica* **50** (2008) 555–583.
16. S. Fujishige, G. A. Koshevoy, and Y. Sano: Matroids on convex geometries. *Discrete Mathematics* **307** (2007) 1936–1950; available online, December 1, 2006.
17. S. Fujishige and A. Tamura: A two-sided discrete-concave market with possibly bounded side payments: an approach by discrete convex analysis. *Mathematics of Operations Research* **32** (2007) 136–155.
18. S. Mamada, T. Uno, K. Makino and S. Fujishige: An $O(n \log^2 n)$ algorithm for the optimal sink location problem on dynamic tree networks. *Discrete Applied Mathematics* **154** (2006) 2387–2401.
19. S. Fujishige and A. Tamura: A general two-sided matching market with discrete concave utility functions. *Discrete Applied Mathematics* **154** (2006) 950–970.
20. S. Fujishige and S. Iwata: Bisubmodular function minimization. *SIAM Journal on Discrete Mathematics* **19** (2006) 1065–1073.
21. Y. Matsuoka and S. Fujishige: Practical efficiency of maximum flow algorithms using MA orderings and preflows. *Journal of the Operations Research Society of Japan* **48** (2005) 297–307.
22. S. Mamada, T. Uno, K. Makino, and S. Fujishige: A tree partitioning problem arising from an evacuation problem in tree dynamic networks with multiple exits. *Journal of the Operations Research Society of Japan* **48** (2005) 196–206.
23. S. Fujishige: Dual greedy polyhedra, choice functions, and abstract convex geometries. *Discrete Optimization* **1** (2004) 41–49.
24. A. Eguchi, S. Fujishige, and T. Takabatake: A polynomial-time algorithm for the generalized independent-flow problem. *Journal of the Operations Research Society of Japan* **47** (2004) 1–17.
25. S. Fujishige, K. Makino, T. Takabatake, and K. Kashiwabara: Polybasic polyhedra: Structure of polyhedra with edge vectors of support size at most 2. *Discrete Mathematics* **280** (2004) 13–27.
26. S. Fujishige and S. Isotani: New maximum flow algorithms by MA orderings and scaling. *Journal of the Operations Research Society of Japan* **46** (2003) 243–250.
27. S. Fujishige and Z. Yang: A note on Kelso and Crawford’s gross substitutes condition. *Mathematics of Operations Research* **28** (2003) 463–469.
28. S. Fujishige: Submodular function minimization and related topics. *Optimization Methods and Software* **18** (2003) 167–180.
29. S. Fujishige: A maximum flow algorithm using MA ordering. *Operations Research Letters* **31** (2003) 176–178.
30. K. Makino, T. Takabatake and S. Fujishige: A simple matching algorithm for regular bipartite graphs. *Information Processing Letters* **84** (2002) 189–193.

31. S. Fujishige and S. Iwata: A descent method for submodular function minimization. *Mathematical Programming*, Ser. A **92** (2002), 387–390.
32. S. Mamada, K. Makino and S. Fujishige: Optimal sink location problem for dynamic flows in a tree network. *IEICE Transactions on Fundamentals* **E85-A** (2002) 1020–1025.
33. S. Fujishige and Z. Yang: Existence of an equilibrium in a general competitive exchange economy with indivisible goods and money. *Annals of Economics and Finance* **3** (2002) 135–147.
34. K. Arata, S. Iwata, K. Makino and S. Fujishige: Locating sources to meet flow demands in undirected networks. *Journal of Algorithms* **42** (2002) 54–68.
35. S. Iwata, L. Fleischer and S. Fujishige: A combinatorial strongly polynomial algorithm for minimizing submodular functions. *Journal of ACM* **48** (2001) 761–777.
36. S. Fujishige and S. B. Patkar: Realization of set functions as cut functions of graphs and hypergraphs. *Discrete Mathematics* **226** (2001) 199–210.
37. S. Fujishige and K. Murota: Notes on L-/M-convex functions and the separation theorems. *Mathematical Programming* **88** (2000) 129–146.
38. S. Fujishige: A note on Faigle and Kern’s dual greedy polyhedra. *Mathematical Programming* **88** (2000) 217–220.
39. S. Fujishige, X. Liu and X. Zhang: An algorithm for solving the minimum-norm point problem over the intersection of a polytope and an affine set. *Journal of Optimization Theory and Applications* **105** (2000) 113–141.
40. S. Fujishige and S. Iwata: Algorithms for submodular flows. *IEICE Transactions on Information and Systems* **E83-D** (2000) 322–329.
41. S. Fujishige: A laminarity property of the polyhedron described by a weakly posi-modular set function. *Discrete Applied Mathematics* **100** (2000) 123–126.
42. S. Fujishige and S. Iwata: Minimizing a submodular function arising from a concave function. *Discrete Applied Mathematics* **92** (1999) 211–215.
43. S. Fujishige: Another simple proof of the validity of Nagamochi and Ibaraki’s min-cut algorithm and Queyranne’s extension to symmetric submodular function minimization. *Journal of the Operations Research Society of Japan* **41** (1998) 626–628.
44. S. Fujishige and Z. Yang: A lexicographic algebraic theorem and its applications. *Linear Algebra and Its Applications* **279** (1998) 75–91.
45. K. Ando, S. Fujishige and T. Naitoh: Balanced bisubmodular systems and bidirected flows. *Journal of the Operations Research Society of Japan* **40** (1997) 437–447.
46. S. Fujishige: A min-max theorem for bisubmodular polyhedra. *SIAM Journal on Discrete Mathematics* **10** (1997) 294–308.
47. K. Ando, S. Fujishige and T. Nemoto: The minimum-weight ideal problem for signed posets. *Journal of the Operations Research Society of Japan* **39** (1996) 558–565.

48. S. Fujishige and X. Zhang: A push/relabel framework for submodular flows and its refinement for 0-1 submodular flows. *Optimization* **38** (1996) 133–154.
49. K. Ando and S. Fujishige: On structures of bisubmodular polyhedra. *Mathematical Programming* **74** (1996) 293–317.
50. K. Ando, S. Fujishige and T. Nemoto: Decomposition of a signed graph into strongly connected components and its signed poset structure. *Discrete Applied Mathematics* **68** (1996) 237–248.
51. K. Ando, S. Fujishige and T. Naitoh: A characterization of bisubmodular functions. *Discrete Mathematics* **148** (1996) 299–303.
52. K. Ando, S. Fujishige and T. Naitoh: A greedy algorithm for minimizing a separable convex function over a finite jump system. *Journal of the Operations Research Society of Japan* **38** (1995) 362–375.
53. S. Fujishige and S. B. Patkar: The orthant non-interaction theorem for certain combinatorial polyhedra and its implications in the intersection and the Dilworth truncation of bisubmodular functions. *Optimization* **34** (1995) 329–339.
54. S. Fujishige and X. Zhang: An efficient cost scaling algorithm for the independent assignment problem. *Journal of the Operations Research Society of Japan* **38** (1995) 124–136.
55. K. Ando, S. Fujishige and T. Naitoh: A greedy algorithm for solving a separable convex optimization problem on an integral bisubmodular polyhedron. *Journal of the Operations Research Society of Japan* **37** (1994) 188–196.
56. K. Iwano, S. Misono, S. Tezuka and S. Fujishige: A new scaling algorithm for the maximum mean cut problem. *Algorithmica* **11** (1994) 243–255.
57. S. Fujishige, H. Sato and P. Zhan: An algorithm for finding the minimum-norm point in the intersection of a polyhedron and a hyperplane. *Japan Journal of Industrial and Applied Mathematics* **11** (1994) 245–264.
58. S. Fujishige, K. Iwano, J. Nakano and S. Tezuka: A speculative contraction method for minimum cost flows: Toward a practical algorithm. *DIMACS Series in Discrete Mathematics and Theoretical Computer Science* **12** (1993) 219–245.
59. S. Fujishige and P. Zhan: A dual algorithm for finding a nearest pair of points in two polytopes. *Journal of the Operations Research Society of Japan* **35** (1992) 353–365.
60. S. Fujishige and X. Zhang: New algorithms for the intersection problem of submodular systems. *Japan Journal of Industrial and Applied Mathematics* **9** (1992) 369–382.
61. T. Naitoh and S. Fujishige: A note on the Frank-Tardos bi-truncation algorithm for crossing-submodular functions. *Mathematical Programming* **53** (1992) 361–363.
62. S. Fujishige and P. Zhan: A dual algorithm for finding the minimum-norm point in a polytope. *Journal of the Operations Research Society of Japan* **33** (1990) 188–195.
63. S. Fujishige, H. Röck and U. Zimmermann: A strongly polynomial algorithm for minimum cost submodular flow problems. *Mathematics of Operations Research* **14** (1989) 60–69.

64. S. Fujishige: Optimization over the polyhedron determined by a submodular function on a co-intersecting family. *Mathematical Programming* **42** (1988) 565-577.
65. A. Tamura, H. Takehara, K. Fukuda, S. Fujishige and M. Kojima: A dual interior primal simplex method for linear programming. *Journal of the Operations Research Society of Japan* **31** (1988) 413-430.
66. W.-T. Cui and S. Fujishige: A primal algorithm for the submodular flow problem with minimum-mean cycle selection. *Journal of the Operations Research Society of Japan* **31** (1988) 431-441.
67. S. Fujishige, N. Katoh and T. Ichimori: The fair resource allocation problem with submodular constraints. *Mathematics of Operations Research* **13** (1988) 164-173.
68. K. Murota and S. Fujishige: Finding a homotopy base for directed paths in an acyclic graph. *Discrete Applied Mathematics* **17** (1987) 157-162.
69. S. Fujishige: An out-of-kilter method for submodular flows. *Discrete Applied Mathematics* **17** (1987) 3-16.
70. S. Fujishige: From classic flow problems to “neoflow” problems. *Transactions of the Electronics, Information and Communication Engineers of Japan* **J70-A**, No. 2 (1987) 3-16 (in Japanese).
71. S. Fujishige: A capacity rounding algorithm for the minimum cost circulation problem — A dual framework of the Tardos algorithm. *Mathematical Programming* **35** (1986) 298-308.
72. S. Fujishige, A. Nakayama and W.-T. Cui: On the equivalence of the maximum balanced flow problem and the weighted minimax flow problem. *Operations Research Letters* **5** (1986) 207-209.
73. S. Fujishige: A decomposition of distributive lattices. *Discrete Mathematics* **55** (1985) 35-55.
74. S. Fujishige: Submodular systems and related topics. *Mathematical Programming Study* **22** (1984) 113-131.
75. S. Fujishige: A system of linear inequalities with a submodular function on $\{0, \pm 1\}$ vectors. *Linear Algebra and Its Applications* **63** (1984) 253-266.
76. S. Fujishige: On the subdifferential of a submodular function. *Mathematical Programming* **29** (1984) 348-360.
77. S. Fujishige: A characterization of faces of the base polyhedron associated with a submodular system. *Journal of the Operations Research Society of Japan* **27** (1984) 112-129.
78. S. Fujishige: Theory of submodular programs: a Fenchel-type min-max theorem and subgradients of submodular functions. *Mathematical Programming* **29** (1984) 142-155.
79. S. Fujishige: Structures of polyhedra determined by submodular functions on crossing families. *Mathematical Programming* **29** (1984) 125-141.

80. S. Fujishige: A note on Frank's generalized polymatroids. *Discrete Applied Mathematics* **7** (1984) 105-109.
81. S. Fujishige and N. Tomizawa: A note on submodular functions on distributive lattices. *Journal of the Operations Research Society of Japan* **26** (1983) 309-318.
82. S. Fujishige: Canonical decompositions of symmetric submodular systems. *Discrete Applied Mathematics* **5** (1983) 175-190.
83. S. Fujishige: A note on the problem of updating shortest paths. *Networks* **11** (1981) 317-319.
84. M. Iri and S. Fujishige: Use of matroid theory in operations research, circuits and systems theory. *International Journal of Systems Science* **12** (1981) 27-54.
85. S. Fujishige: An efficient PQ-graph algorithm for solving the graph-realization problem. *Journal of Computer and System Sciences* **21** (1980) 63-86.
86. S. Fujishige: Lexicographically optimal base of a polymatroid with respect to a weight vector. *Mathematics of Operations Research* **2** (1980) 186-196.
87. S. Fujishige: Principal structures of submodular systems. *Discrete Applied Mathematics* **2** (1980) 186-196.
88. S. Fujishige: Polymatroidal dependence structure of a set of random variables. *Information and Control* **39** (1978) 55-72.
89. S. Fujishige: "Independent flow" problems and submodular functions. *Journal of the Faculty of Engineering, University of Tokyo A*, No. 16 (1978), pp.42-43 (in Japanese).
90. S. Fujishige: Algorithms for solving the independent-flow problems. *Journal of the Operations Research Society of Japan* **21** (1978) 189-204.
91. M. Iri, N. Tomizawa and S. Fujishige: Controllability and observability of linear systems with combinatorial constraints. *Transactions of the Institute of Instrument and Control Engineers* **13** (1977) 235-242 (in Japanese).
92. S. Fujishige: An algorithm for finding an optimal independent linkage. *Journal of the Operations Research Society of Japan* **20** (1977) 159-75.
93. S. Fujishige: A primal approach to the independent assignment problem. *Journal of the Operations Research Society of Japan* **20** (1977) 1-15.

Conferences

1. S. T. McCormick and S. Fujishige: Strongly polynomial and fully combinatorial algorithms for bisubmodular function Minimization. SODA08, San Francisco, California, January 20-22, 2008.
2. S. Fujishige: Zonotopes and the LP-Newton method for linear programming. ICOTA7, Kobe, December 12-15, 2007 (a plenary talk).

3. M. Sakashita, K. Makino, H. Nagamochi, and S. Fujishige: Minimum transversals in posi-modular systems. ESA2006 (14th Annual European Symposium on Algorithms 11–13 September 2006) (ETH Zürich, Zürich, Switzerland) LNCS **4168** (2006) 576–587.
4. M. Sakashita, K. Makino and S. Fujishige: Minimum cost source location problems with flow requirements. LATIN2006 (Theoretical Informatics: 7th Latin American Symposium, Valdivia, Chile, March 20–24, 2006) (J. R. Correa, A. Hevia, and M. Kiwi, Eds.), LNCS **3887** (2006) 769–780.
5. M. Sakashita, K. Makino and S. Fujishige: Minimizing a monotone concave function with laminar covering constraints. ISAAC2005 (December 19–21, 2005) (Sanya, Hainan, China), LNCS **3827** (X. Deng and D. Du, Eds.), pp. 71–81.
6. S. Mamada, K. Makino, and S. Fujishige: An evacuation problem in tree dynamic networks with multiple exits. In: *Systems and Human Science—For Safety, Security, and Dependability* (Elsevier, 2004), pp. 517–526.
7. A. Eguchi, S. Fujishige and A. Tamura: A generalized Gale-Shapley algorithm for a discrete-concave stable-marriage model. ISAAC 2003, LNCS **2906** (T. Ibaraki, N. Katoh, and H. Ono, Eds.), pp. 495–504.
8. S. Fujishige and S. Iwata: Bisubmodular function minimization. IPCO 2001, LNCS **2081** (2001) 160–169.
9. S. Iwata, L. Fleischer and S. Fujishige: A combinatorial, strongly polynomial-time algorithm for minimizing submodular functions. *Proceedings of the 32nd Annual ACM Symposium on Theory of Computing* (Portland, OR, USA) (2000), pp. 96–107.
10. K. Arata, S. Iwata, K. Makino and S. Fujishige: Locating sources to meet flow demands in undirected networks. *Lecture Notes in Computer Science* **1851** (2000), pp. 300–313.
11. S. Fujishige: Linear and nonlinear optimization problems with submodular constraints. In: *Mathematical Programming* (M. Iri and T. Tanabe, eds., KTK Scientific Publishers, Tokyo, 1989), pp. 203–225.
12. S. Fujishige: Combinatorial optimization problems described by submodular functions. 10th IFORS Conference, Washington D. C., 6–10 August, 1984. *Operations Research '84* (J. P. Brans, ed., Elsevier Science Publishers B. V., 1984), pp. 379–392.
13. N. Tomizawa and S. Fujishige: Historical survey of extension of the concept of principal partition and their unifying generalization to hypermatroids. *Proceedings of the 1982 International Symposium on Circuits and Systems*, Vol. 1 of 3 (May 10–12, 1982, Rome), pp. 142–145.